Abstract

A nucleic acid amplifier capable of efficiently performing PCR even with the use of nucleic acid synthetase having no heat resistance property, which nucleic acid amplifier can realize nucleic acid synthetase reutilization, scaleup, etc. and facilitates separation/purification of nucleic acid after amplification; and a method of nucleic acid amplification performed therewith. In particular, the method comprises causing a reaction solution containing at least a nucleic acid to be used as a template, a nucleic acid to be used as a primer, a phosphate compound and a metal ion to flow through a flow channel containing a denaturation region for melting an intramolecularly and/or intermolecularly formed double strand of nucleic acid so as to effect denaturation into single strands and a regeneration region for regenerating a double strand of nucleic acid from the nucleic acid after the double strand melting, thereby melting at the denaturation region the intramolecularly and/or intermolecularly formed double strand of nucleic acid to be used as the template so as to effect denaturation into single strands and thereafter at the regeneration region not only regenerating a double strand between the nucleic acid to be used as template after the double strand melting and the nucleic acid to be used as a primer but also carrying out nucleic acid synthesis with a nucleic acid synthetase immobilized within the regeneration region.